

Brilliant Violet 605™ anti-human CD49d Antibody

Catalog# / Size	304323 / 25 tests 304324 / 100 tests
Clone	9F10
Regulatory Status	RUO
Workshop	V S215
Other Names	VLA-4 α chain, α 4 integrin, Integrin α 4 chain, ITGA4
Isotype	Mouse IgG1, κ
Description	CD49d is a 150 kD α integrin chain known as α 4 integrin or VLA-4 α chain. It forms a heterodimer with either integrin β 1 (α 4 β 1, VLA-4) or β 7 (α 4 β 7). CD49d is expressed broadly on T lymphocytes, B lymphocytes, monocytes, thymocytes, eosinophils, basophils, mast cells, NK cells, dendritic cells, and some non-hematopoietic cells, but not on normal red blood cells, platelets or neutrophils. VLA-4 binds to VCAM-1 (CD106) and fibronectin. α 4 β 7 is the receptor for VCAM-1 and MAdCAM-1. CD49d participates in mononuclear cell trafficking to endothelial sites of inflammation and has roles in cell-cell interactions and cell adhesion to extracellular matrices. CD49d is involved in lymphocyte migration, T cell activation, and hematopoietic stem cell differentiation. CD49d is a marker to isolate pure populations of Treg cells due to its absence on Foxp3 ⁺ cells.

Product Details

Verified Reactivity	Human, Cynomolgus, Rhesus
Reported Reactivity	African Green, Baboon, Cat, Cow, Chimpanzee, Common Marmoset, Dog, Horse, Sheep, Squirrel Monkey
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).
Preparation	The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 605™ under optimal conditions.
Concentration	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.)
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	FC - Quality tested
Recommended Usage	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis . For flow cytometric staining, the suggested use of this reagent is 5 μ l per million cells in 100 μ l staining volume or 5 μ l per 100 μ l of whole blood.

Brilliant Violet 605™ excites at 405 nm and emits at 603 nm. The bandpass filter 610/20 nm is recommended for detection, although filter optimization may be required depending on other fluorophores used. **Be sure to verify that your cytometer configuration and software setup are appropriate for detecting this channel.** Refer to your instrument manual or manufacturer for support. Brilliant Violet 605™ is a trademark of Sirigen Group Ltd.

[Learn more about Brilliant Violet™.](#)

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Excitation Laser	Violet Laser (405 nm)
Application Notes	Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen tissue sections, and <i>in vitro</i> T cell costimulation ^{2,3} . The Ultra-LEAF™ Purified antibody (Endotoxin < 0.01 EU/μg, Azide-Free, 0.2 μm filtered) is recommended for functional assays (Cat. No. 304339 and 304340).
Application References (PubMed link indicates BioLegend citation)	<ol style="list-style-type: none"> Schlossman S, <i>et al.</i> Eds. 1995. Leucocyte Typing V. Oxford University Press. New York. Jeong SH, <i>et al.</i> 2004. <i>J. Virol.</i> 78:6995. (Costim) Vogel TU, <i>et al.</i> 2002. <i>J. Immunol.</i> 169:4511. (Costim) Kleinewietfeld M, <i>et al.</i> 2009. <i>Blood</i> 113:827. (FC) PubMed Palacios F, <i>et al.</i> 2010. <i>Blood</i> 115:4488. PubMed Yoshino N, <i>et al.</i> 2000. <i>Exp. Anim. (Tokyo)</i> 49:97. (FC) Sestak K, <i>et al.</i> 2007. <i>Vet. Immunol. Immunopathol.</i> 119:21. Mattapallil MJ, <i>et al.</i> 2011. <i>J. Immunol.</i> 187:1977. PubMed
Product Citations	<ol style="list-style-type: none"> Zhang B, <i>et al.</i> 2021. <i>Nat Biomed Eng.</i> 5:1288. PubMed
RRID	AB_2566768 (BioLegend Cat. No. 304323) AB_2566769 (BioLegend Cat. No. 304324)

Antigen Details

Structure	Integrin, type I transmembrane glycoprotein, 150 kD.
Distribution	T cells, B cells, NK , dendritic cells, thymocytes, monocytes, eosinophils, mast cells.
Function	Lymphocyte migration, T cell activation, stem cell differentiation.
Ligand/Receptor	Fibronectin, VCAM-1, MAdCAM-1
Cell Type	B cells, Dendritic cells, Eosinophils, Mast cells, Monocytes, NK cells, T cells, Thymocytes, Tregs
Biology Area	Cell Adhesion, Cell Biology, Immunology, Innate Immunity
Molecular Family	Adhesion Molecules, CD Molecules
Antigen References	<ol style="list-style-type: none"> Elices M, Ed.1995. <i>Springer Semin. Immunopathol.</i> 16(4). Lobb RR and Helmer ME. <i>et al.</i> 1994. <i>J. Clin. Invest.</i> 94:1722.
Gene ID	3676

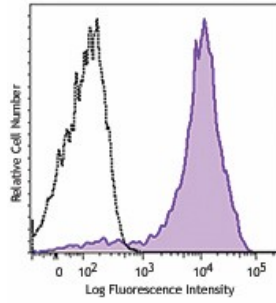
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

APC anti-human CD49d, PE anti-human CD49d, PE/Cyanine5 anti-human CD49d, Purified anti-human CD49d, Alexa Fluor® 594 anti-human CD49d, PerCP/Cyanine5.5 anti-human CD49d, PE/Cyanine7 anti-human CD49d, FITC anti-human CD49d, Brilliant Violet 510™ anti-human CD49d, Brilliant Violet 421™ anti-human CD49d, Purified anti-human CD49d (Maxpar® Ready), Brilliant Violet 605™ anti-human CD49d, PE/Dazzle™ 594 anti-human CD49d, APC/Cyanine7 anti-human CD49d, Brilliant Violet 711™ anti-human CD49d, Alexa Fluor® 647 anti-human CD49d, Biotin anti-human CD49d, TotalSeq™-A0576 anti-human CD49d, Brilliant Violet 785™ anti-human CD49d, APC/Fire™ 750 anti-human CD49d, Ultra-LEAF™ Purified anti-human CD49d, TotalSeq™-C0576 anti-human CD49d, TotalSeq™-B0576 anti-human CD49d Antibody, TotalSeq™-D0576 anti-human CD49d

Product Data



Human peripheral blood lymphocytes were stained with CD49d (clone 9F10) Brilliant Violet 605™ (filled histogram) or mouse IgG1, κ Brilliant Violet 605™ isotype control (open histogram).

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